Long-Term Surveillance and Maintenance Program
UMTRCA Title I Disposal Sites

U.S. Department of Energy
Grand Junction Office

FACT SHEET

The Grand Junction Office has provided cost-effective and efficient stewardship since 1988

Overview

The Federal Government is required to provide monitoring and maintenance for all disposal sites remediated under Title I of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) (Public Law 95–604). These stewardship responsibilities are assigned to the U.S. Department of Energy (DOE) Long-Term Surveillance and Maintenance (LTSM) Program at the DOE Grand Junction, Colorado, Office.

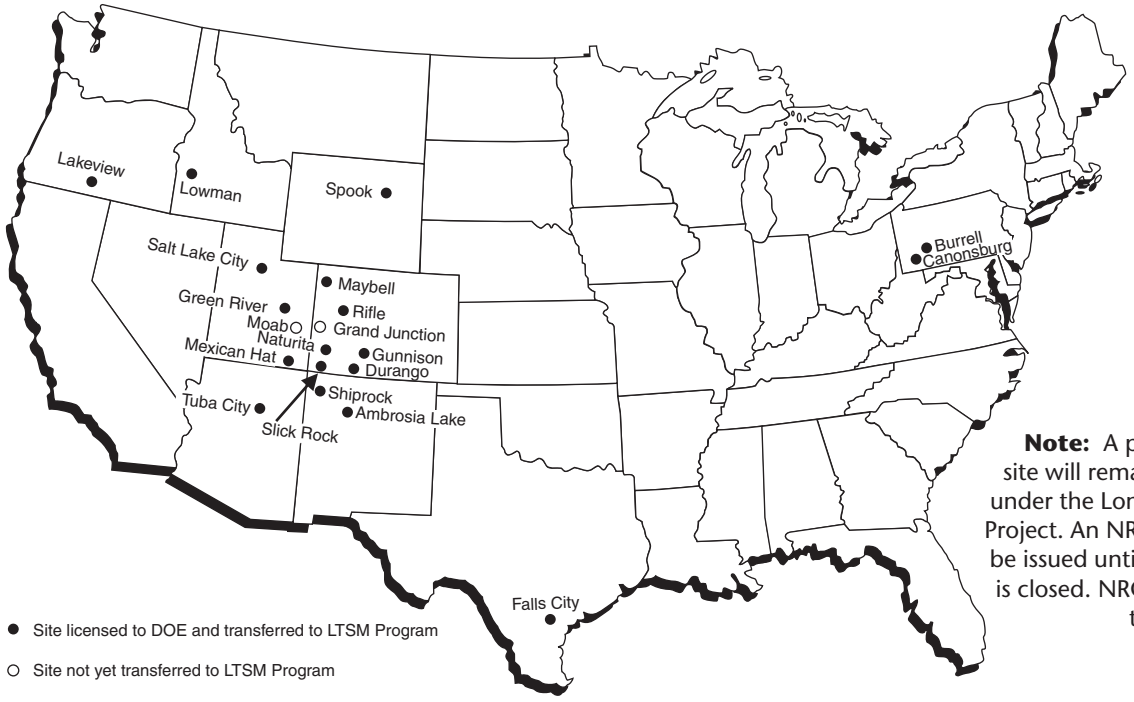
Title I of UMTRCA identified 24 inactive millsites for remedial action where uranium was produced. UMTRCA directed the U.S. Environmental Protection Agency (EPA) to establish standards for remediation of buildings, open lands, and groundwater at the former processing sites and performance standards for the disposal cells. These standards, promulgated by EPA at Title 40, *Code of Federal Regulations* (CFR), Part 192, direct DOE to design the disposal cells to "...be effective for up to one thousand years, to the extent reasonably achievable, and, in any case, for at least 200 years..."

DOE has completed surface cleanup at 22 of the 24 Title I processing sites; two sites in North Dakota were delisted at the request of that state. These remediation activities resulted in disposal of approximately 43 million cubic yards of low-level radioactive materials. The residual radioactive materials were encapsulated in 19 disposal cells licensed by the U.S. Nuclear Regulatory Commission (NRC). In 2001, Congress designated the Moab, Utah, processing facility as an UMTRCA Title I site and directed DOE to remediate the facility.

Disposal Cell Design

Typical Title I disposal cells are surface impoundments that isolate contaminated materials from the environment. Disposal cell locations were selected on the basis of low erosion potential, minimal geologic or environmental hazard, minimized threat to the environment, and remoteness from areas of human activity.

The design of each disposal cell was unique to accommodate local environmental conditions. Relocated contaminated materials were placed on low-permeability material and enclosed with a multilayer cover. The cover incorporates a low-permeability soil layer that reduces radon emissions and water infiltration; a layer of free-draining bedding material to promote rapid runoff of precipitation; and a layer of erosion-protection material, either a planted soil and rock matrix or large-diameter rock (riprap). Additional cover components may include frost-protection layers,



Locations of UMTRCA Title I Disposal Sites

Note: A portion of the Grand Junction site will remain open until as late as 2023 under the Long-Term Radon Management Project. An NRC license for this site will not be issued until the open portion of the cell is closed. NRC has conditionally approved the closed portion of the cell.

capillary breaks, and bentonite mats. The top and side slopes of the disposal cell are sloped to encourage drainage while preventing erosion.

Areas surrounding the disposal cell are engineered to protect the cell from erosion and other potential threats to cell integrity. Run-on water is intercepted and diverted, where necessary. Disturbed areas were revegetated, and erosion-protection material was installed in outlying areas to prevent head-cutting erosion into the cell area. Access controls were installed, which may include warning signs or fences with locked gates.

Remediation Process

At each site, DOE decided whether to stabilize the contaminated materials at the processing site or to relocate the materials to an off-site location more suitable for long-term storage. In each case, DOE prepared an environmental assessment or an environmental impact statement and other associated documentation. DOE also prepared a remedial action plan that described the site restoration activities that, when remedial action was complete, would result in compliance with applicable standards. This plan required NRC and State or tribal approval.

Each site was remediated in accordance with the remedial action plan. When remedial action was completed, DOE obtained NRC concurrence in the completion of remedial action. However, where contaminated materials were impounded at the former millsite and groundwater was contaminated as a result of historic site processing operations, NRC concurred only that cleanup and disposal of the surface contamination was complete. NRC concurrence in groundwater restoration will be postponed until groundwater quality meets applicable standards. For sites where the contaminated materials were relocated to an off-site disposal location, NRC concurred that the disposal site complied with all applicable standards.

DOE will achieve groundwater compliance at the former processing sites through passive flushing or active restoration. Groundwater restoration activities can require many years of remediation; however, 40 CFR 192 stipulates that compliance with groundwater standards must be achieved within 100 years.

Except for disposal sites on tribal lands, title to the land and the contaminated materials in the disposal cell was transferred to the Federal Government for administration by DOE. On tribal lands, the tribal government retained title to the land. In either case, DOE obtained permanent access to the disposal site to conduct necessary stewardship activities. DOE presented evidence of clear title to sites on Federal property to NRC.

Disposal Site Licensing

Title I of UMTRCA requires that upon completion of remedial action by DOE, each designated disposal site must be monitored and maintained by DOE or another Federal agency under the NRC general license at 10 CFR 40.27.

DOE prepared a long-term surveillance plan (LTSP) for each disposal site. The content of the plan is specified in 10 CFR 40.27. The plan specifies how DOE will care for and operate the disposal site. Upon NRC concurrence in the LTSP, the disposal site was accepted under the general license.

At Title I sites where surface remedial action has been completed but groundwater contamination remains, NRC will accept the surface improvements under the general license but will not fully license the site until groundwater restoration activities are complete.

The NRC license does not expire. Accordingly, DOE has responsibility to care for the sites in perpetuity.

LTSM Program Activities

The LTSM Program is responsible for ongoing regulatory compliance at Title I sites. Program specialists inspect each Title I site and report site conditions to NRC annually. Inspection parameters are specified in the LTSPs.

Site inspections identify conditions that might affect site integrity. These changes are evaluated and the program conducts needed maintenance or monitoring, as necessary. Maintenance activities have included repairs to fences and site access controls; adjustments to drainage and construction of drainage structures to correct erosion problems; and vegetation control, including periodic mowing.

Groundwater monitoring is conducted by the LTSM Program at eight sites to demonstrate that the cells are performing as designed to protect site groundwater.

Contacts

For more information about UMTRCA Title I sites or about the LTSM Program, contact

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or visit the Internet site at
http://www.gjo.doe.gov/programs/ltsm